REMARKS

Claims 1-8 and 10-21 are pending in the application. Claims 1, 2 and 11 have been amended for clarification purposes. Since the amendments to the claims place the application in condition for allowance, remove issues in the event of an appeal, and do not require a further search, entry of the amendments to claims 1, 2 and 11 is respectfully requested.

The specification has been amended to recite subject matter that was incorporated by reference.

Additionally, entry and consideration of the following remarks is respectfully requested.

I. The 35 U.S.C. 112, Second Paragraph Rejection:

Claims 1 and 11 have been rejected under 35 U.S.C. 112, second paragraph, as indefinite. Specifically, the Examiner contends that it is not understood what is meant by soft or what soft is referring to in the limitation "soft polar additive" as used in claims 1 and 11.

Applicants submit that this term is not indefinite. The term "soft polar additive" does not define any polar additive. The Specification has been amended to further define "soft polar additive", and to distinguish soft polar additives from hard polar additives. Support for this amendment can be found at col. 5, lines 7-30 of U.S. 5,585,193, which is incorporated by reference in the present application at page 11, lines 16-18. A person of ordinary skill in the art upon reading Applicants' amended specification would be able to determine what is meant by the term "soft polar additive".

In view of the above, Applicants believe the rejection of claims 1 and 11 to be unfounded. Accordingly, withdrawal of the rejection of claims 1 and 11 is believed due and is respectfully requested.

II. The Art Rejections:

A. Claims 1-8 and 10-19 have been rejected under the judicially created doctrine of double patenting over claims 1-18 of U.S. Patent No. 6,436,496.

Should all other rejections be withdrawn and the claims considered allowable, Applicants are prepared to file a terminal disclaimer to obviate the double patenting rejection.

B. Claims 1, 4-7, 10-11, 16-17 and 20-21 have been rejected under 35 U.S.C. 102(b) over Peiffer et al. (U.S. Patent No. 5,443,895).

The Examiner contends that Peiffer et al. teaches a halogen-free, multi-layered heat shrink film comprising a core layer and a top layer arranged on either side of the base layer. The Examiner also contends that the core layer comprises a copolymer of ethylene and propylene and a propylene homopolymer. Further, the top layers or skin layers are formed from a polyolefin homopolymer such as ethylene and a copolymer of propylene and butene or blend of the two polymers.

Peiffer teaches a multilayer transparent polyolefin film for application in shrink labeling in which the heat shrinkable film comprises a base layer prepared from a polypropylene-containing polymer and a hydrocarbon resin. The base layer contains about 5 to 40% by weight of a polypropylene homopolymer, 0 to about 30% by weight of a hydrogenated hydrocarbon resin having a softening point in the range from about 80 to 125°C and from about 30 to 95% by weight of a random ethylene propylene copolymer.

Claim 1, as amended, recites a halogen-free, multilayered heat shrink film comprising (A) a core layer comprising a copolymer of propylene with an alpha olefin containing from 4 to 12 carbon atoms, the core having an upper and lower surface, (B) a skin layer on the upper surface of the core layer, wherein the skin layer comprises a polyolefin or polyolefin blend, and (C) a printable layer having an upper surface and lower surface, and comprising a blend of a polyolefin and a soft polar additive, wherein the upper surface of the printable layer is in contact

with the lower surface of the core layer, wherein the shrinkage of the film is at least about 30%. Peiffer does not teach a core layer comprising this composition. Rather, Peiffer teaches a core layer comprising a polypropylene homopolymer, a hydrogenated hydrocarbon resin, and a random ethylene propylene copolymer, but fails to disclose a copolymer of propylene with an alpha olefin containing 4 to 12 carbon atoms.

Furthermore, Peiffer does not disclose, teach or suggest a print layer comprising a blend of a polyolefin and a soft polar additive. Rather, Peiffer discloses the addition of antistatic agents, including saturated aliphatic tertiary amines with aliphatic radicals; anti-blocking agents, including polyamides, polyesters and polycarbonates; and lubricants, including higher aliphatic acid amides, higher aliphatic acid esters, waxes and metallic soaps. None of the additives disclosed by Peiffer include soft polar additives. While some of the disclosed additives can be characterized as polar, they are not soft polar additives. As defined in the present specification, as amended, soft polar additives are to be distinguished from "hard" polar additives which include polyamides (e.g., nylon), polyesters (e.g., polyethylene terephthalate), and polystyrene.

Regarding dependent claims 4 and 5, the core layer (A) is recited as further comprising an olefin homopolymer, such as a propylene or butylene homopolymer. Peiffer fails to disclose this specific composition in its core layer. Rather, Peiffer's core layer discloses a polypropylene homopolymer, but fails to disclose a copolymer of propylene with an alpha olefin containing from 4 to 12 carbon atoms.

Regarding dependent claim 10, the printable layer (C) is recited as comprising a blend of a soft polar additive and a polyolefin such as an ethylene or propylene homopolymer or a copolymer of ethylene and propylene. Peiffer does not teach the use of this composition in its skin layers. Rather, Peiffer's skin layers disclose a polyolefin homopolymer such as ethylene and a copolymer of propylene and butene or blend of the two polymers but fails to disclose the addition of a soft polar additive. As stated above, Peiffer discloses the addition of

antistatic agents and anti-blocking agents. None of the additives disclosed by Peiffer include soft polar additives as defined by Applicant's amended disclosure. Thus, the reference does not anticipate claims 1, 4-7, 10, 16 and 20.

Claim 11 has been amended to recite that the core layer (A) comprises a blend of (1) a copolymer of ethylene or propylene with an alpha olefin of 4 to 12 carbon atoms and (2) a homopolymer of an olefin. Peiffer fails to disclose this composition in any of its layers. Rather, Peiffer's core layer recites a polypropylene homopolymer, a hydrogenated hydrocarbon resin, and a random ethylenepropylene copolymer, but fails to disclose a copolymer of ethylene or propylene with an alpha olefin having 4 to 12 carbon atoms. Applicants submit that in view of the amendment to claim 11, the reference does not anticipate claims 11, 17 and 21.

Therefore, Applicants submit that claims 1, 4-7, 10-11, 16-17 and 20-21 are novel over Peiffer et al. Accordingly, withdrawal of the rejection of claims 1, 4-7, 10-11, 16-17 and 20-21 is believed due and is respectfully requested.

C. Claims 1-8 and 10-17 have been rejected under 35 U.S.C. 102(e) over Williams (U.S. Patent No. 6,322,883).

The Examiner contends that Williams teaches a halogen-free multilayered heat shrink film comprising a core layer and at least one skin layer in which the skin layer is printable. The Examiner contends that Williams teaches a core layer which is a blend of a copolymer of polypropylene and butene and a homopolymer of propylene. The Examiner also contends that Williams teaches that the skin layer is formed from the same materials as the claimed core layer and that a polyethylene skin layer and a printable skin layer are disclosed. Finally, the Examiner contends that the printable layer contains an anti-blocking agent which is a soft polar additive.

Contrary to the Examiner's contentions, Williams teaches a uniaxially heat-shrinkable, biaxially oriented, multilayer film having a polypropylene-containing-core layer and at least one high density polyethylene containing skin layer adjacent to the core layer. Whereas, claim 1 has been amended to recite

that the core layer of the present invention comprises a copolymer of propylene with an alpha olefin containing from about 4 to 12 carbon atoms. Williams does not teach a core layer comprised of a copolymer of propylene with an alpha olefin containing from 4 to 12 carbon atoms. Rather, Williams teaches that the core layer must provide sufficient operability so that the film after biaxial orientation exhibits crystallinity which is low enough to permit the secondary orientation of the film. Therefore, Williams teaches that the core layer material can be either a single polyproplyene homopolymer material that is sufficiently atactic or a polyolefin other than isotactic polypropylene with a modifier. Williams teaches that the modifiers can be atactic polypropylene, syndiotactic polypropylene, ethylene-propylene copolymer, propylene-butene-1 copolymer, propylene-butene-1 copolymer, ethylene-propylene-butene-1 terpolymer, polybutene-1, or linear low density polyethylene.

Further, Williams does not disclose, teach or suggest a print layer comprising a blend of a polyolefin and a soft polar additive. Rather, Williams discloses the addition to at least one of the skin layers of an anti-blocking agent. The anti-blocking agent may be silica, clays, talc, glass or a non-meltable silicon resin, e.g., particulate cross-linked hydrocarbyl-substituted polysiloxanes. The anti-blocking agents are particulate matter, of which the major proportion of the particles, for example, anywhere from more than half to as high as 90 wt.% or more, will be of such size that significant portion of their surface area will extend beyond the exposed surface of the skin layer. Such anti-blocking agents are not soft polar additives. Thus, the reference does not anticipate claims 1-8 and 10.

Claim 11 has been amended to recite that the core layer (A) comprises a blend of (1) a copolymer of ethylene or propylene with an alpha olefin of 4 to 12 carbon atoms and (2) a homopolymer of an olefin. Williams fails to disclose this composition in any of its layers. Rather, Williams' film recites a polypropylene-containing-core layer, but fails to disclose a copolymer of ethylene or propylene with an alpha olefin having 4 to 12 carbon atoms. Applicants submit that in view of the amendment to claim 11, the reference does not anticipate claims 11-17.

Further, Williams teaches that the skin layer is comprised of a high density polyethylene, and may be corona treated to improve the receptivity of the layer to printing inks, coatings, adhesive anchorage, and/or its suitability for such subsequent manufacturing operations as lamination. Whereas, the present invention teaches a printable layer comprised of a blend of a polyolefin and a soft polar additive. The Examiner contends that the anti-blocking agents of Williams are soft polar additives. As stated above, Williams does not disclose a print layer comprising a blend of a polyolefin and a soft polar additive. Rather, Williams discloses the addition of an anti-blocking agent. These anti-blocking agents do not fall into the definition of soft polar additives, as set forth in Applicant's amended disclosure.

Therefore, Applicants submit that claims 1-8 and 10-17 are novel over Williams. Accordingly, withdrawal of the rejection of claims 1-8 and 10-17 is believed due and is respectfully requested.

D. Claims 1-2, 16 and 20 have been rejected under 35 U.S.C. 102(e) over Turnbull et al. (U.S. Patent No. 5,948,513).

The Examiner contends that Turnbull teaches a halogen-free, multilayered heat shrink film comprising a core layer and two outside layers. The Examiner also contends that the core layer comprises linear low density polyethylene, which is a copolymer of ethylene with an alpha olefin containing from about 3 to about 12 carbon atoms. The Examiner contends that the two outside layers comprise linear low density polyethylene and ethylene vinyl acetate copolymer, which are soft polar additives. The Examiner also contends that at least one of the outside layers is a printable layer. The Examiner contends that the core layer contains 100% by weight of the copolymer and that the shrinkage of the film is inherently at least 30%. Finally, the examiner contends that the heat shrink film is used to encapsulate an article.

Claim 1 has been amended to recite that the core layer of the present invention comprises a copolymer of propylene with an alpha olefin containing from about 4 to 12 carbon atoms. Turnbull does not teach, disclose or suggest a

core layer comprising a copolymer of propylene with an alpha olefin containing from 4 to 12 carbon atoms. Turnbull is specifically limited to a core layer comprising a linear low density polyethylene. Claim 2 has also been amended to recite that the core layer comprises a copolymer of propylene and butene or hexene. Turnbull does not teach a core layer comprising a copolymer of propylene and butene or hexene.

In view of the amendments to claims 1 and 2, the reference does not anticipate claims 1-2, 16 and 20. Thus, Applicants submit that claims 1-2, 16 and 20 are not anticipated by the reference. Withdrawal of the rejection is believed to be warranted and is respectfully requested.

E. Claim 20 has been rejected under 35 U.S.C. 103(a) over Williams in view of Turnbull et al.

The Examiner admits that Williams fails to explicitly teach that the core layer is made from a copolymer alone. However, the Examiner contends that it would have been obvious to modify the core layer of Williams by substituting the blend of a copolymer of polypropylene and butene and a homopolymer of polypropylene with a linear low density polyethylene, as disclosed in Turnbull. Applicants respectfully submit that a prima facie case of obviousness has not been established by the Examiner.

Williams discloses a uniaxially heat-shrinkable, biaxially oriented, multilayer film having a polypropylene-containing-core layer and at least one high density polyethylene containing skin layer. The composition of the polypropylene-containing core layer of the multilayer film must provide sufficient operability so that the film after biaxial orientation exhibits crystallinity which is low enough to permit the secondary orientation of the film, the uniaxial shrinkability of the film without tearing. (Col. 3, lines 16-21). The core layer material can be a single polypropylene homopolymer which is sufficiently atactic or a blend of a more isotactic polypropylene with modifiers. Typically, the modifiers are polyolefins, such as ethylene-propylene copolymer, propylene-butene-1 copolymer, and linear low density polyethylene (LLDPE). (Col. 3, lines

33-39). Isotactic polypropylene is combined with the modifiers to provide a core layer having a higher degree of chain imperfections and the desired post primary orientation crystallinity. The desired crystallinity avoids tearing of the biaxially oriented film during secondary orientation at stretch levels of greater than 30%. (Col. 3, lines 40-45).

Turnbull discloses a laminate of two or more heat-shrinkable thermoplastic packaging films. The laminate comprises two individual films which are wound together in a roll such that the outer surface of the first layer adheres to the outer surface of the second layer. The core layer of each film comprises linear low density polyethylene (LLDPE). (Col. 1, lines 40-50).

The Examiner contends that it would be obvious to one of ordinary skill in the art to modify the core layer of Williams by substituting the blend of a copolymer of polypropylene and butene and a homopolymer of polypropylene with a linear low density polyethylene (LLDPE). Applicants believe the Examiner's contention is without merit. Williams would discourage a construction where the core layer consists only of LLDPE. Williams makes no teaching or suggestion that the reference construction would be improved by the substitution of LLDPE in the core layer. In fact, Williams teaches away from a core layer comprised of LLDPE alone. Specifically, Williams teaches that the use of isotactic polypropylene combined with a modifier, such as LLDPE provides a core layer having a higher degree of chain imperfections and the desired post primary orientation crystallinity. Thus, it's the <u>combination</u> of isotactic polypropylene and modifiers which produce the desired crystallinity to avoid tearing of the biaxially oriented film during secondary orientation at stretch levels of greater than 30%. One of ordinary skill in the art upon reading Williams would not be motivated to substitute the composition of the core layer for LLDPE as taught in Turnbull, when the substitution would not produce the desired crystallinity that Williams requires.

Further, the combination of Williams and Turnbull does not disclose the present invention. As stated above, Williams does not disclose, teach or suggest a print layer comprising a blend of a polyolefin and a <u>soft polar additive</u>. Rather,

Williams discloses the addition to at least one of the skin layers of an anti-blocking agent, such as silica, clays, talc, glass or a non-meltable silicon resin. The anti-blocking agents are particulate matter, of which the major proportion of the particles will be of such size that a significant portion of their surface area will extend beyond the exposed surface of the skin layer. Such anti-blocking agents are not soft polar additives.

In view of the above, Applicants believe the rejection of claim 20 over the combination of Williams and Turnbull to be unfounded. Accordingly, withdrawal of the rejection of claim 20 is believed to be warranted and is respectfully requested.

F. Claims 18-19 have been rejected under 35 U.S.C. 103(a) over Williams in view of Call (U.S. Patent No. 4,756,415).

The Examiner contends that Williams teaches all that is claimed in claims 16 and 17, but fails to explicitly teach that the film is used for encapsulating a battery. However, Call teaches that it is known to use shrink-wrap material for encapsulating a battery. The Examiner also contends that it would have been obvious to one of ordinary skill in the art to use the polyolefin shrink-wrapping film of Williams for packaging a battery. Applicants respectfully disagree with the Examiner's contention.

As set forth above, Williams does not teach the multilayer film claimed by Applicants. Williams does not disclose, teach or suggest a print layer comprising a blend of a polyolefin and a soft polar additive. Rather, Williams discloses the addition to at least one of the skin layers of an anti-blocking agent, such as silica, clays, talc, glass or a non-meltable silicon resin. The anti-blocking agents are particulate matter, of which the major proportion of the particles will be of such size that a significant portion of their surface area will extend beyond the exposed surface of the skin layer. Such anti-blocking agents are not soft polar additives.

Further, Call does not cure the deficiencies of Williams. Call discloses a shrink wrap enclosure for battery storage and transport to prevent the corrosive

effects of battery leakage and spillage. The enclosure comprises the shrink wrap material, a battery terminal and vent cover protection pads. Call makes a brief statement that shrink film may be polyethylene but does not teach or suggest the multilayered film claimed by Applicants. Furthermore, Call does not teach or suggest modifying the multilayer film of Williams to arrive at Applicant's claimed multilayered film. Applicants respectfully request withdrawal of the rejections of claims 18 and 19.

In view of the foregoing remarks, Applicants respectfully request allowance of claims 1-8 and 10-21.

Should the Examiner believe that a telephone interview would be helpful to expedite favorable prosecution, the Examiner is invited to contact Applicants' undersigned attorney at the telephone number listed below.

Applicants believe that no fees are due in connection with the filing of this document. However, if it is determined that any fees are required, Applicants request the Commissioner to charge those fees to our Deposit Account No. 18-0988, Attorney Docket No. **AVERP2544USA**.

Respectfully submitted,
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